

AMENDMENTS TO THE CLAIMS

1-13. (Cancelled)

14. – 18. (canceled)

19. (Canceled)

20. – 24. (Canceled)

25. - 31. (Canceled)

32. (Canceled)

33. (Withdrawn, currently amended) A method for measuring the intracellular ATP comprising: extracting ATP from a cell sample in the presence of a surfactant, adding a luminescence reagent containing the surfactant resistant luciferase of Claim 1435, 37 or 40 for a time and under conditions suitable to produce the emission of light, and detecting or measuring the emission of light.

34. (Withdrawn, currently amended) A method for measuring the intracellular ATP comprising: extracting ATP from a cell sample in the presence of a surfactant, adding a luminescence reagent containing the surfactant resistant luciferase of Claim 3235, 37 or 40 for a time and under conditions suitable to produce the emission of light, and detecting or measuring the emission of light.

35. (Currently amended) A luciferase protein that retains more than 85% of its luciferase activity in 0.1% benzalkonium chloride compared to its luciferase activity in the absence of benzalkonium chloride produced by a process comprising:

culturing a bacterium comprising a polynucleotide obtained by amplifying a template nucleic acid prepared from GENJI firefly, or HEIKE firefly, North American firefly, Russian firefly, *Pyrophorus plagiophthalmus, Arachnocapa luminosa, or Rail worm* using the oligonucleotide primers having the sequence of SEQ ID Nos: 1 and 2 that encodes a luciferase protein that retains more than 85% of its luciferase activity in 0.1% benzalkonium chloride compared to its luciferase activity in the absence of benzalkonium chloride, and
recovering from the culture said luciferase protein.

36. (Canceled)

37. (Currently amended) The luciferase protein of claim 14, A firefly luciferase having resistance to a surfactant,

wherein said luciferase retains at least 85% of its activity in the presence of 0.1% surfactant, in which the said luciferase comprises comprising the amino acid sequence PXAVVVLX₄₉₀GKXMTE, in which X₄₉₀ is an amino acid other than glutamic acid and X is any amino acid.

38. – 39. (Canceled)

40. (Currently amended) The luciferase of claim 35, wherein the luciferase comprises the amino acid sequence PXAVVVLX₄₉₀KGKXMTE, PGAVVVLX₄₉₀KGKSMTE, in which X₄₉₀ is an amino acid other than glutamic acid and X is any amino acid.

41. (Canceled)

42. (New) The luciferase of claim 37, wherein the luciferase comprises the amino acid sequence PGAVVVLX₄₉₀KGKSMTE, in which X₄₉₀ is an amino acid other than glutamic acid.